User's Guide: Connecting to ERDC MSRC HPC Systems with a Palm ™ Organizer

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With mobile computing gaining popularity, many options are becoming available. The workhorse of mobile computing is still the laptop computer, but pocket-sized computers are fast becoming the computer of choice for mobile computing sessions. To address this shift, this guide provides instructions for ERDC MSRC users on using a Palm™ Organizer to connect to their accounts. Instructions in this guide are given for a Palm™ V running OS version 3.1.1 and using version 3.0.1 of the Palm™ Desktop software, but they should also be useful for other Palm™ devices running different software versions. With a Palm™ Organizer, a Palm™ modem (or Palm™ with built-in modem), some freeware, and this guide, you will be able to access your account, submit or check the status of jobs, issue commands, and perform other simple tasks.

The 5-step process of preparing a Palm™ for connection to the ERDC MSRC High Performance Computing (HPC) systems is described in this document. Because users who log in with a Palm™ Organizer must enter through a gateway, Section 1 describes obtaining an account on a gateway computer. Sections 2 and 3 detail the downloading and installation of Top Gun ssh, a free secure shell program. In Section 4, the configuration of the the Palm™ Organizer is explained. Section 5 details the procedure required to log in with a Palm™ Organizer. The document concludes with a sample login session. Note that on-screen named buttons and dialog boxes will appear in quotes such as "button" while named icons will not.

1 Requesting an Account on the Gateway System

An account on the ERDC MSRC gateway system (*agate.wes.hpc.mil*) is necessary to access account(s) via a Palm™ Organizer[1]. Organizers, access via the gateway will no longer be necessary. Users who do not already have an account on `agate`, will need to request an account through the Customer Assistance Center (CAC), specifying Palm™ connectivity as the reason for the request. CAC can be reached by phone at 1-800-500-4722 or by email at

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[1]Access via the gateway will be necessary since there is no known project to port Kerberos to Palm™ Organizers.

`info-hpc@wes.hpc.mil`. While the `agate` account request is being processed, the necessary software can be downloaded and installed by completing Sections 2 and 3.

2   Downloading Top Gun ssh

Top Gun ssh, the secure shell program that will be used to log into `agate`, will be downloaded. If the software is already installed on your organizer, go to Section 4. Top Gun ssh is freeware that can be found at *http://www.isaac.cs.berkeley.edu/pilot/*. Using the computer that has the Palm™ Organizer's synchronizing cradle attached, visit the web site listed above and download the binaries for Top Gun ssh. The updated library Top Gun Login Lib, which can be found at the same site, must also be downloaded for Palm III™ and newer versions of the Palm™ Organizer.

After downloading the files, unzip TGssh-*.zip. If your computer does not have an unzip program, the site *http://www.cdrom.com/pub/infozip/* has versions for numerous operating systems. Please note that care must be taken to avoid allowing the older version of the Top Gun Login Lib contained in the Top Gun zip file to overwrite the newer version of the library that was just downloaded. After both files have been downloaded and unzipped, they are ready to be installed on the organizer.

3   Installing Top Gun ssh

Unfortunately, the installation procedure differs slightly for different models of Palm™ Organizers. The installation instructions given in this guide apply to a Palm V™ and will need to be modified for other models. Please refer to the "Installing and Removing Applications" section in your organizer's handbook.

1. Copy or move the downloaded files into the add-on folder in the Palm™ Desktop directory on the computer.

2. Double click the Palm™ Desktop icon on the computer to start up the Palm™ Desktop.

3. Click the "Install" button on the left side of the Palm™ Desktop. After the "Install Tools" dialog box appears, modify the user if necessary.

4. Click the "Add" button on the right side of the "Install Tools" dialog box.

5. From the "Open" dialog box that appears, choose all of the *.prc files that were just downloaded, and click "Open." When the "Install Tools" dialog box returns, check to ensure that all the files you downloaded appear in the list. If necessary, click "Add" and repeat the process until all downloaded files appear in the list.

6. Perform a HotSync operation as directed in your organizer's handbook. After the HotSync, the software will be installed on the Palm™ Organizer, and the TG ssh icon will appear on the organizer.

4   Configuring the Palm™ Organizer

Some setup of the Palm™ Organizer networking software is required before it can be used. The software can be set up to connect via an Internet Service Provider (ISP) or directly to ERDC MSRC via the toll-free number 1-800-500-9472. The setup required to connect via the toll-free number is described first, followed by instructions to connect via an ISP.

4.1   Connecting via the ERDC MSRC Toll-Free Number

First, when using the toll-free number, the flow control on the modem must be enabled. Flow control gives the modem a mechanism to halt data transmissions when its receive buffers are full. To enable the flow control, please do the following:

1. Locate and tap the Prefs icon on the Palm™ Organizer.

2. Tap the down arrow next to the heading at the top right of the screen to bring up a menu.

3. Select "Modem."

4. On the modem screen, tap the down arrow next to "Flow Ctl:" and choose "On."

 Next, the network settings must be adjusted.

1. From "Preferences" tap the down arrow next to the heading at the top right.

2. From the drop-down menu that appears, select "Network."

3. Tap the Menu icon at the bottom left of the screen to bring up the "Service" menu and tap "New" to enter a new service.

4. Edit the first two lines to read `ERDC` and `MAXUSER` as seen in Figure 1.

5. Tap in the "Password" box and enter the password `AAAAAA`. Note that both the user name and password must be entered in all capital letters.

Figure 1: Entering a new service

6. Enter `18005009472` for the phone number. If necessary enter a "Dial prefix." For example, if you need to dial 9 to get an outside line, enter 9 on the "Dial prefix"line and check the box in front of "Dial prefix." If you have call waiting, it must be disabled to avoid interference with the connection. Determine the code necessary to disable call waiting; enter that code on the "Disable call waiting" line, and check the associated box.

7. Tap "OK" to return to the "Network" window.

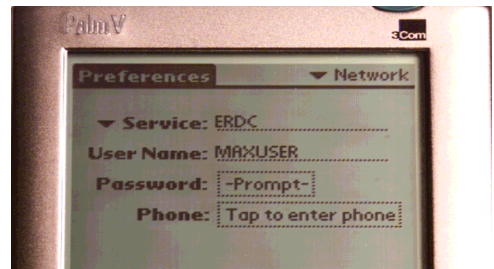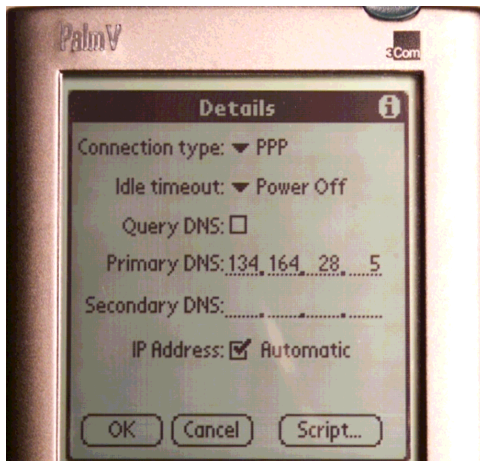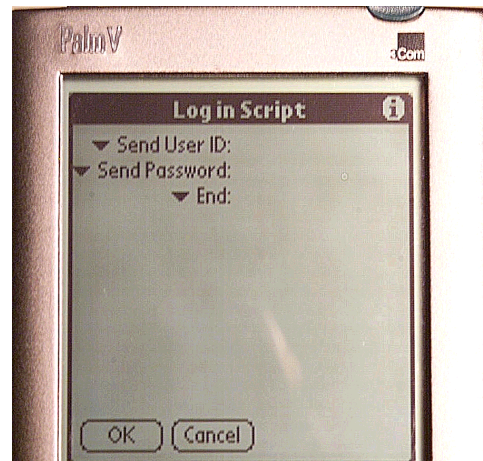8. Tap the "Details" button at the bottom left of the screen.

9. Edit the screen to show a connection type of `PPP`, an idle timeout of `Power Off`, a Primary DNS of `134.164.028.005`, and an IP address of `Automatic` as seen in Figure 2(a).

(a)   (b)

Figure 2: Editing the Detail screen and entering a script for the new service

10. Now a connection script must be entered into the organizer. To do this, tap the "Script" button on the bottom right of the screen. To enter additional items in the script, tap the down arrow next to "End." From the pop-up menu, tap "Send User ID," which will enter "Send User ID" into the script. Tap the down arrow next to "End" again, and select "Send Password" from the menu. The script should now match Figure 2(b).

11. Tap "OK."

At this point, the setup of the organizer is now complete. Proceed to Section 5 for instructions on connecting to ERDC MSRC.

4.2   Connecting via an Internet Service Provider (ISP)

To adjust network settings:

1. Locate and tap the Prefs icon on the Palm™ Organizer.

2. Tap the down arrow next to the heading at the top right.

3. From the drop-down menu that appears, select "Network."

4. Tap the Menu icon at the bottom left of the screen to bring up the "Service" menu. Several of the more common ISPs are listed. If your ISP is in the list, select it. If your ISP is not listed, tap the Menu icon at the bottom left of the screen twice to bring up the "Service" menu and tap "New."

5. Verify that the service listed is correct, or tap the "Service" line to delete the service name and replace it.

6. Tap the "User Name" line and enter your ISP user name.

7. You may enter the password or leave it set to prompt for security purposes. If you leave the password set to prompt, you will be prompted to enter the password at login.

8. Tap the "Phone" box and a "Phone Setup" box will appear. On the phone line, enter the phone number of your ISP. If necessary, enter a "Dial prefix." For example, if you need to dial 9 to get an outside line, enter 9 on the "Dial prefix" line and check the box in front of "Dial prefix." If you have call waiting, it must be disabled to avoid interference with the connection. Determine the code necessary to disable call waiting, enter the code on the "Disable call waiting" line, and check the associated box.

9. Tap the "Details" button. If your ISP was listed, this screen should be set appropriately. If you had to enter a new ISP, you may need to modify the settings on the screen for your particular ISP. If necessary consult your ISP to determine the appropriate settings.

To enter a connection script, tap the "Script" button. Again, if your ISP was in the list, this script should be set appropriately and will not require altering. However, if you added a new ISP, you will need to enter a script to be used by your Palm™ Organizer during the connection process. Unfortunately, each ISP is potentially different and may need a different script. Use an actual login session from your computer to your ISP as a guide when constructing the script. To alter the script, please do the following:

1. Tap the down arrow beside "End" to see a menu of available commands and tap the desired command. Continue this process until all desired commands have been entered.

2. Test the script by tapping "OK" at the current and subsequent screens, then tapping "Connect" at the third screen.

3. If the connection is not established properly, tap "Details" followed by "Script" to get back to the script and try again.

After failed connections, a log file is created that may help with troubleshooting the script. The log file can be accessed from the initial "Network" screen, which shows the "Service," "User Name," "Password," and "Phone." Access the log file by tapping the Menu icon at the bottom left of the screen, tapping "Options" at the top right of the screen, and then choosing "View Log." Continue adjusting the script until a connection can be established with the ISP. The Palm™ Organizer is now configured.

5 Connecting to an ERDC MSRC HPC System

After the account on `agate` has been established, Top Gun ssh installed, and the network software configured, the Palm™ Organizer will be ready to access an account(s) on an ERDC MSRC HPC system.

1. If your organizer requires a modem, attach the external modem to the Palm™ Organizer, and plug the modem into a standard phone jack.

2. Next, locate the Prefs icon and tap it.

3. If the top right of the screen is not displaying "Network," tap the down arrow and choose "Network" from the menu.

4. The service line should say "ERDC" or indicate the name of your ISP. If it does not, tap the down arrow beside "Service" and choose "ERDC" or your ISP from the menu. If neither appears in the menu, return to Section 4 to define a new service. If the screen is similar to the screen shown in Figure 3, with the "Service" line showing "ERDC" or your ISP, tap the "Connect" button to dial and connect. The "Service Connection Progress" window will indicate that the connection has been established and then disappear. You will be returned to the "Network" screen but now the right button at the bottom of the screen shows the option to disconnect if desired.
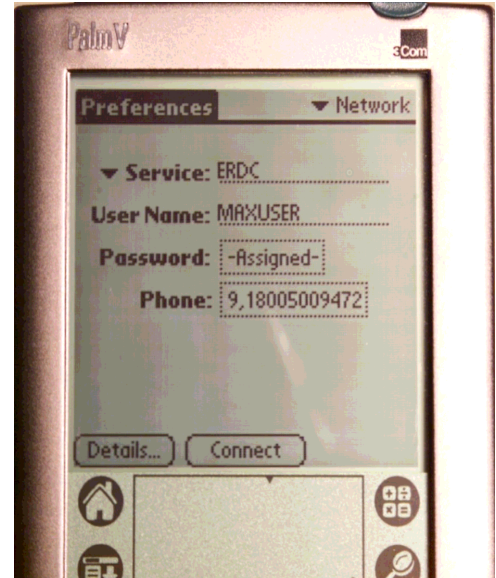

Figure 3: Network connection screen with ERDC selected

5. Once the connection has been established, the Top Gun ssh program can be used to log in to `agate`. Tap the Home icon at the bottom left of the screen. Then locate and tap the TG ssh icon.

6. Tap the "Host" line and enter `agate` with the keyboard or graffiti screen. On the "Username" line enter your ERDC MSRC user name. At this point the host and user name can be saved by tapping the Menu icon at the bottom left of the screen, tapping "Save," and choosing a buffer. If the host and user name are saved in a buffer, you will be able to tap the Menu icon, tap load, and choose the appropriate buffer to load the host and user name the next time TG ssh is started.

7. On the password line, you must enter the passcode from your SecurID. Because the passcode is not sent immediately, it is important that you enter a fresh passcode. The bars to the left of the SecurID passcode need to be near the top of the screen when you enter the code, to ensure that the passcode does not expire before it is received by `agate`.

8. Tap the "Log in" button at the bottom of the screen.

9. After the connection to `agate` is established, `agate` will request that you enter your password and another passcode from your SecurID. Both entries must be followed by a carriage return.

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At this point a Kerberos ticket is issued, and you are able to `rlogin` to any ERDC MSRC HPC system on which you have an account. If the font on the Palm™ Organizer is too small or too large, the font can be adjusted by tapping the Menu icon and using the menu at the top of the screen to adjust the font. After logging in to the desired system, any commands that would normally be issued from your workstation or personal computer can be entered. Simply enter the command(s) using the keyboard or graffiti screen and tap the "Send" button. To send an "Enter," tap the "Send CR" button at the bottom of the screen. The command will then be executed. When using a Palm™, you may notice that the regular organizer keyboard does not contain all the symbols typically needed. To find additional symbols, such as the redirect and pipe symbols, use the numeric keyboard. After you have logged out at the end of your session, you will be returned to the Top Gun ssh screen. To disconnect from your ISP or the ERDC MSRC 800 number, locate and tap the Prefs icon and select disconnect.

6 Sample Login Session

This section demonstrates a normal login procedure as well as potential uses of a Palm™ Organizer. An organizer is used to login to the SGI Origin2000 (*origin.wes.hpc.mil*), submit a script, and check the status of the job.

- To establish the connection to the gateway, complete the nine steps in Section 5: Connecting to an ERDC MSRC HPC. Upon completion, the login to `agate` is accomplished and a Kerberos ticket has been issued.

- At this point, a `rlogin` to *origin.wes.hpc.mil* is initiated.

- The appropriate directory is reached by sending a `cd` command as seen in Figure 4.

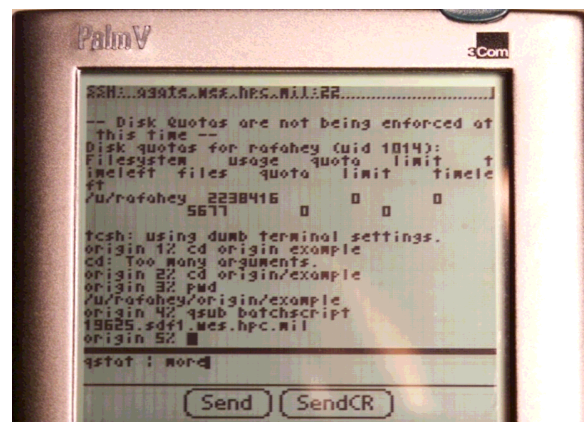- A `pwd` command is sent to verify that the appropriate directory has been reached.

Figure 4: Entering commands to *origin.wes.hpc.mil*

- A script is submitted using the `qsub` command.

- To verify that the job was submitted a `qstat` command can be issued as seen in Figure 5.

- After logging out at the end of the session, it is necessary to return to the Preferences screen on the organizer to disconnect.
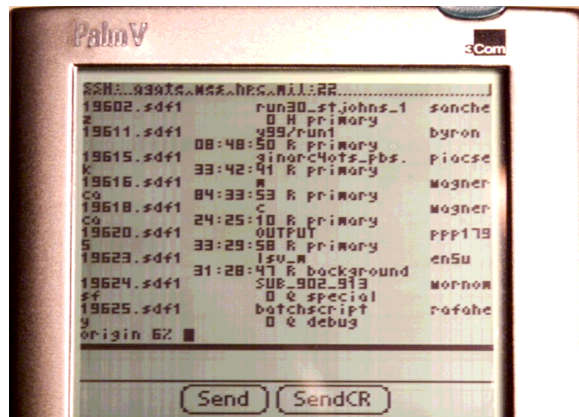

Figure 5: Viewing the output of a `qstat` command

7   Conclusion

Accessing the ERDC MSRC HPC systems using a Palm™ Organizer is a relatively easy process. Downloading the necessary software and configuring an organizer to access the site can be completed in an afternoon. For the effort, complete access to all ERDC MSRC accounts from a hand-held computing device, which is small enough to fit in a pocket, will be as close as the nearest phone line. Although a Palm™ Organizer is not a replacement for a workstation, or even a laptop, an organizer is useful for short computing sessions away from your normal workstation.

This guide was developed in an effort to improve the mobile computing options available to ERDC MSRC HPC users. Other efforts to improve mobile computing are under consideration, such as: job submission via email with email receipts that include batch queue information, and Unix command output formatted for the smaller Palm™ screens. Job submission via email has several attractive features: 1) job scripts can be edited locally, 2) the gateway can be eliminated, and 3) useful for laptops too. Questions/comments concerning this guide, along with suggestions for improving mobile computing support, may be referred to the Customer Assistance Center at 1-800-500-4722 or at `info-hpc@wes.hpc.mil`.

References

[1] *Palm V™ Organizer Handbook*. 3Com Corporation, 1998.

[2] *Palm V™ Modem Handbook*. 3Com Corporation, 1998.